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STA 304H1 S/1003H S, WINTER 2017
SURVEYS, SAMPLING AND OBSERVATIONAL DATA

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Time: M 4-5, AH 100, Th 3-5, NF 003, web-site: on Portal.

Instructor: Dragan Banjevic (dragan.banjevic@utoronto.ca), office BA8139, tel: 946-3939, office hours: Wednesdays, 5-6.

Textbook: Scheaffer, Mendenhall, Ott: Elementary Survey Sampling (Seventh ed.).
Useful but not required: Lohr: Sampling: Design and Analysis.

Marking scheme: First test (20%, February 9), second test 20% (March 20, tentatively) (tests are held in class time), final exam 60% (3h, in exam period, April 10-28). Formula sheet for tests and final will be posted on Portal. **There are no make-up tests.** With a valid reason (U of T doctor's note) your mark will be adjusted. If you miss the first test, the second test weight will be adjusted. If you miss the second test, the weight of the final will be adjusted (warning: difficulty increases from the first test to the final; final covers complete course).

Tutorials: There are no tutorials, but you can come for help to Stat. Aid Centre, SS1091, before tests: date and time will be announced. Some extra office hours before the final will be available. Class slides and sample tests and finals will be posted on the web-site. **You are required to bring handouts to the class regularly.**

Calculation: No statistical software is required. Still, the course includes a lot of numerical calculation. You will need a basic scientific hand-calculator, with statistical functions, and experience in working with it (**start using it from the first day**). Inability to work with it will not be an excuse. Programmable calculators are not allowed on tests and final exam. Don't forget this.

Course outline: Almost all of the course material is covered by the textbook. Related to the basic level of the textbook, some theoretical results will be considered in more detail. The following is a tentative schedule for the course:

1. Sampling problems and notions (Ch 2), recommended exercises: 1-7, 28.
2. Basic concepts (Ch 3). Exercises: 2-8, 21.
3. Simple random sampling (Ch 4; 4.6 is not covered), exercises: 1, 2, 14-17, 18a, 20, 21, 23-28, 36, 38, 41, 42.
4. Stratified random sampling (Ch 5; 5.10, 5.11 are not covered), exercises: 1-3, 5-8, 12-17, 24, 26, 27.
5. Ratio, regression, and difference estimation (Ch 6; 6.5 is not covered), exercises: 1, 2, 6, 9, 16, 23, 26, 27.
6. Systematic sampling (Ch 7), exercises: 3, 4, 8, 21, 25, 27.
7. Cluster sampling (Ch 8; 8.8 is not covered), exercises: 2-5, 8, 9,16, 17, 20, 24, 25, 26, 27.
8. Two-stage cluster sampling (Ch 9), exercises: 2-4, 6, 9, 10, 14-16.
9. Supplemental topics, nonsampling errors (Ch 11.1, 11.2, 11.4, 11.8 are covered), exercises: 1, 13, 14.